



Enabler Release Definition for Push

Candidate Version 2.3 – 13 Oct 2009

Open Mobile Alliance
OMA-ERELD-Push-V2_3-20091013-C

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1. Scope

The scope of this document is limited to the Enabler Release Definition of Push according to OMA Release process and the Enabler Release specification baseline listed in section 5.

The Push enabler release defines the application level protocols, syntax and behaviours of client and server for the fulfilment of push services. Push service is defined as communication of content toward a client without an explicit request.

2. References

2.1 Normative References

- [CBS] "Technical realization of Cell Broadcast Service (CBS)", 3rd Generation Partnership Project; Technical Specification Group Terminals; URL:http://www.3gpp.org/ftp/Specs/archive/23_series/23.041/
- [ERELDDM] "Enabler Release Definition for Device Management version 1.2". Open Mobile Alliance™. OMA-ERELD-DM-V1_2-20060208-C., URL:<http://www.openmobilealliance.org/>
- [MBMS] "Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs", 3rd Generation Partnership Project, Technical Specification 3GPP TS 26.346, URL: <http://www.3gpp.org/>
- [PPGService] "Push Proxy Gateway Service Specification". Open Mobile Alliance™. OMA-TS-PPGService-V2_2. URL:<http://www.openmobilealliance.org/>
- [PushCAI] "Push Client - Application Interface Specification". Open Mobile Alliance™. OMA-TS-PushCAI-V1_0. URL:<http://www.openmobilealliance.org/>
- [PushCO] "Cache Operation". WAP Forum™. WAP-175-CacheOp. URL:<http://www.openmobilealliance.org/>
- [PushCO-SIN] "Cache Operaton-Specification Information Note". WAP Forum™. WAP-175_102-CacheOp URL:<http://www.openmobilealliance.org/>
- [PushETR] "Push 2.2 Enabler Test Requirements". Open Mobile Alliance™. OMA-ETR-Push-V2_2 URL:<http://www.openmobilealliance.org/>
- [PushOTA] "Push OTA Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PushOTA-V2_2. URL:<http://www.openmobilealliance.org/>
- [PushPAP] "Push Access Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PAP-V2_2 URL:<http://www.openmobilealliance.org/>
- [PushMsg] "Push Message Specification". Open Mobile Alliance™. OMA-TS-Push_Message-V2_2. URL:<http://www.openmobilealliance.org/>
- [PushSI] "Service Indication". WAP Forum™. WAP-167-ServiceInd URL:<http://www.openmobilealliance.org/>
- [PushMO] "Push Management Object". Open Mobile Alliance™. OMA-TS-Push_MO-V1_0. URL:<http://www.openmobilealliance.org/>
- [PushSI-SIN] "Service Indication-Specification Information Note". WAP Forum™. WAP-167_103-ServiceInd URL:<http://www.openmobilealliance.org/>
- [PushSL] "Service Load". WAP Forum™. WAP-168-ServiceLoad URL:<http://www.openmobilealliance.org/>
- [PushSL-SIN] "Service Load-Specification Information Note". WAP Forum™. WAP-168_103-ServiceLoad URL:<http://www.openmobilealliance.org/>
- [SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:<http://www.openmobilealliance.org/>
- [SIPPush] "Session Initiation Protocol (SIP) Push", Open Mobile Alliance™. OMA-ERP-SIP_Push-V1_0. URL:<http://www.openmobilealliance.org/>
- [RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:<http://www.ietf.org/rfc/rfc2119.txt>

2.2 Informative References

- [EMN] "Email Notification" Version 1.0. OMA-Push-EMN-V1_0, Open Mobile Alliance™.
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [EMNEnabler] "Enabler Release Definition Email Notification" Version 1.0. OMA-ERELED-EMN-V1_0, Open Mobile Alliance™. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMADICT] "Dictionary for OMA Specifications", Open Mobile Alliance™, OMA-ORG-Dictionary, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMNA] "OMA Naming Authority". Open Mobile Alliance™.
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/) OMNA.aspx
- [PushArch] "Push Architectural Overview". Open Mobile Alliance™. OMA-AD-Push-V2_2
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [Push2.2] "Enabler Release Definition for Push Version 2.2", Open Mobile Alliance™. OMA-ERELED-Push-V2_2. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [SCR RULES].

3.2 Definitions

Enabler Release	Collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfil a number of related market requirements.
Minimum Functionality Description	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release
Multipoint Push	The Point-to-Multipoint Push feature, in which Push Content is exchanged in multipoint delivery mode, i.e. between one entity and multiple other entities.
PTM-Push	The Point-to-Multipoint Push feature.
Push Access Protocol	A protocol used for conveying content that should be pushed to a client, and push related control information, between a Push Initiator and a Push Proxy/Gateway
Push Client –Application Interface	A device-internal interface provided by Push Clients, via which Push applications can register for Push services with application-specified options, and receive notifications of Push events.
Push Framework	The entire WAP push system. The push framework encompasses the protocols, service interfaces, and software entities that provide the means to push data to user agents in the WAP client.
Push Initiator	The entity that originates push content and submits it to the push framework for delivery to a user agent on a client.
Push OTA Protocol	A protocol used for conveying content between a Push Proxy/Gateway and a certain user agent on a client.
Push Proxy Gateway	A proxy gateway that provides push proxy services.
Push Server	An entity that acts as the server for delivery of Push Content.

3.3 Abbreviations

BCAST	OMA Broadcast
CBS	Cell Broadcast Service
CO	Cache Operation
DTD	Document Type Definition
EMN	Email Notification
ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
MBMS	Multimedia Broadcast Multicast Service
OMA	Open Mobile Alliance
OMNA	OMA Naming Authority

OTA	Over The Air
OTA-HTTP	Over the Air Protocol Variant (HTTP)
OTA-WSP	Over the Air Protocol Variant (Wireless Session Protocol)
PAP	Push Access Protocol
PPG	Push Proxy Gateway
PI	Push Initiator
PTM	Point-to-Multipoint
SI	Service Indication
SIP	Session Initiation Protocol
SL	Service Load

4. Release Version 2.3 Overview

This document outlines the Enabler Release Definition for Push and the respective conformance requirements for clients and servers implementing claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

OMA Push allows Push Initiators and Application Servers to initiate service-related transactions and content delivery to user devices. OMA Push has evolved over several releases, beginning as WAP Push 1.x releases which supported the WAP1 bearers, and releases from WAP Push 2.0 up to OMA Push 2.2 which extended support to WAP2 (HTTP) and SIP bearers. The service environment enabled by OMA Push is illustrated in Figure 1, which shows the two main options for Push service deployment:

- A service/content provider, acting as Push Initiator, requests the OMA Push-based delivery of content to a user through a Push Proxy Gateway (PPG)
- An Application Server directly uses OMA Push to deliver content to a user.

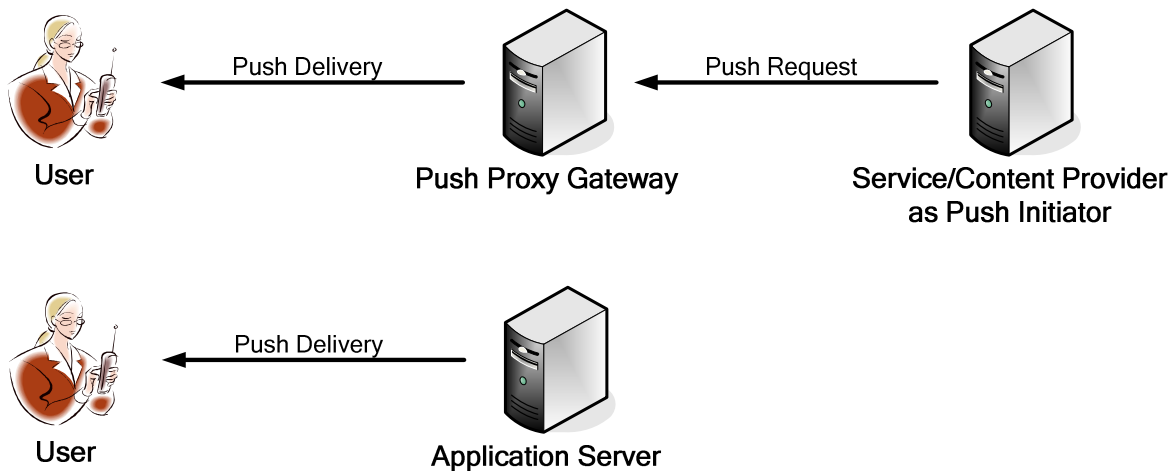


Figure 1: OMA Push service environment

In contrast, the service environment enabled by OMA Push with the enhancement of PTM-Push is illustrated in Figure 2:

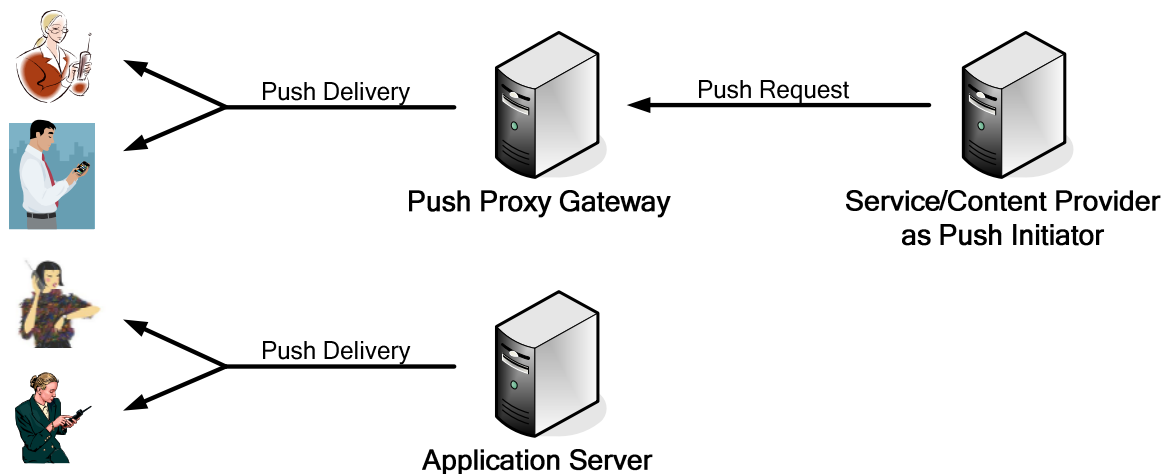


Figure 2: OMA Push service environment with PTM-Push support

OMA Push defines interfaces allowing a *Push Initiator* (PI) to transmit *push content* and *delivery instructions* to a *Push Proxy Gateway* (PPG), and delivery of the push content to the Push Client according to the delivery instructions. The Push Client subsequently delivers the push content to an OMA enabler user-agent or application in the device (hereafter referred to as the “client application”). The PPG and Push Client are the two architectural entities specified by the OMA Push enabler.

The PI may be an application that runs on an ordinary web server, an OMA enabler entity (e.g. multimedia messaging server, device management server,...), or any other application designed to deliver content to users via OMA Push. It communicates with the PPG using the *Push Access Protocol* (PAP). The PPG uses the *Push Over-The-Air* (OTA) *Protocol* to deliver the push content to the Push Client. Note the name Push-OTA is based upon the historical focus of OMA Push on mobile data services, but the protocol is also usable over wired connections. Push-OTA is also directly usable by OMA enabler entities or application servers acting directly as a Push Server.

Client applications may be OMA enabler user agents (e.g. browsers, multimedia messaging clients, instant messaging clients, etc) or other device-resident applications that are supported by the Push Client.

4.1 Version 2.2 Functionality

This enabler release continues on the work of the OMA in the area of Push and is an extension of the Push 2.1 Enabler release [Push2.1], defining push security mechanisms and OTA-SIP as a new Push-OTA protocol variant. An aspect of the defined push security mechanisms depend on device management object extension defined in PushOTA which depends on the OMA Device Management Enabler [ERELDDM].

In addition this enabler release definition defines a minimum level of conformance for segmentation and re-assembly for SMS based Push, as well as push initiator guidelines on the most efficient way to use this form of push delivery mechanism.

4.2 Version 2.3 Functionality

This enabler release is an extension of the Push 2.2 Enabler release [Push2.2], and is referred to as Push 2.3 Point-to-Multipoint Push (PTM-Push). PTM-Push adds multipoint distribution methods to complement the existing point-to-point methods, enabling Push content delivery to a large number of clients simultaneously via network bearers supporting multicast and broadcast operation, e.g. MBMS, Cell Broadcast Service (CBS), and OMA BCAST.

PTM-Push defines push security mechanisms for use multipoint service contexts, and OTA-PTM as a new Push-OTA protocol variant. Aspects of the defined push security mechanisms and Push Client configuration depend on a device management object extension defined in [PushOTA] which depends on the OMA Device Management Enabler [ERELDDM].

5. Document Listing for Push V2.3

This section is normative.

The list of documents will be updated for the final candidate ERP.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
[Push22_RD]	OMA-RD-PushSecurity-V1_0-20050125-C	Push Requirements for Push 2.2
[Push_RD]	OMA-RD-PTM_Push-V1_0-20090526-C	Push Requirements
Architecture Document		
[PushArch]	OMA-AD-Push-V2_3-20091013-C	Push Architecture
Technical Specifications		
[PPGService]	OMA-TS-PPGService-V2_3-20090812-D	Push Proxy Gateway Service Specification
[PushCAI]	OMA-TS-PushCAI-V1_0-20090609-C	Push Client – Application Interface Specification
[PushCBS]	OMA-TS-Push_CBS_Adaptation-V1_0-20090712-D	Push CBS Adaptation Specification
[PushPAP]	OMA-TS-PAP-V2_2-20090609-C	Push Application Protocol (PAP) Specification
[PushOTA]	OMA-TS-PushOTA-V2_3-20090930-D	Push Over the Air (OTA) Specification
[PushMsg]	OMA-TS-Push_Message-V2_3-20090708-D	Push Message Specification Specification
[PushMO]	OMA-TS-Push-MO-V1_0-20071002-C	Push Management Object Specification
[PushSI]	WAP-167-ServiceInd-20010731-a	Push Service Indication Specification
	WAP-167_103-ServiceInd-20010926-a	Specification Information Note
[PushSL]	WAP-168-ServiceLoad-20010731-a	Push Service Load Specification
	WAP-168_103-ServiceLoad-20010816-a.	Specification Information Note
[PushCO]	WAP-175-CacheOp-20010731-a	Push Cache Operation Specification
	WAP-175_102-CacheOp-20010816-a	Specification Information Note
Supporting Files		
[Push_pap]	OMA-SUP-DTD_pap-V2_2-20090609-C	Push Access Protocol DTD Working file in DTD directory: file: pap_2.1.dtd path: http://www.openmobilealliance.org/tech/dtd/
[Push_si]	OMA-SUP-DTD_si-V1_0-20051122-C	Service Indication DTD: Working file in DTD directory: file: si_1.0.dtd path: http://www.openmobilealliance.org/tech/dtd/
[Push_sl]	OMA-SUP-DTD_sl-V1_0-20051122-C	Service Load DTD Working file in DTD directory: file: sl_1.0.dtd path: http://www.openmobilealliance.org/tech/dtd/
[Push_co]	OMA-SUP-DTD_co-V1_0-20051122-C	Cache Operation DTD Working file in DTD directory: file: co_1.0.dtd path: http://www.openmobilealliance.org/tech/dtd/

[Push_MO_push_DDF]	OMA-SUP-MO_Push_DDF-V1_0-20071002-C	Push Device Management Object Description DTD Working file in DTD directory: file: dm_ddf-v1_2.dtd path: http://www.openmobilealliance.org/tech/dtd/
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Email Notification [EMN] is managed under a separate enabler release, OMA Email Notification [EMNEnabler].

6. OMNA Considerations

Push 2.2 includes the following OMNA items:

1. URN-based Management Object Identifiers (*new in Push 2.2*)
 - a. urn:oma:mo:oma-push:1.0
2. PUSH Application Ids
 - a. WAP Push Session Initiation Application (SIA)
 - i. x-wap-application:push.sia
 - b. WML User Agent (browser)
 - i. x-wap-application:wml.ua
3. Media (MIME) Types
 - a. Service Indication
 - i. text/vnd.wap.si
 - ii. application/vnd.wap.sic
 - b. Service Loading
 - i. text/vnd.wap.sl
 - ii. application/vnd.wap.slc
 - c. Cache Operation (*experimental: not yet registered with IANA*)
 - i. text/vnd.wap.co
 - ii. application/vnd.wap.coc
 - d. Session Initiation Application (*experimental: not yet registered with IANA*)
 - i. application/vnd.wap.sia
 - e. Push message encapsulation
 - i. application/vnd.oma.push (*new in Push 2.2*)
4. DOCTYPE Declarations
 - a. Service Indication
 - i. -//WAPFORUM//DTD SI 1.0//EN
 - b. Service Loading
 - i. -//WAPFORUM//DTD SL 1.0//EN
 - c. Cache Operation
 - i. -//WAPFORUM//DTD CO 1.0//EN
 - d. Push Access Protocol
 - i. -//OMA//DTD PAP 2.1//EN

ii. -//OMA//DTD PAP 2.2//EN

5. Document Type Definitions

a. Push Management Object

i. http://www.openmobilealliance.org/Tech/DTD/push_ddf-v1_2.dtd (*new in Push 2.2*)

b. Service Indication

i. http://www.openmobilealliance.org/DTD/si_1.0.dtd

c. Service Loading

i. http://www.openmobilealliance.org/DTD/sl_1.0.dtd

d. Cache Operation

i. http://www.openmobilealliance.org/DTD/co_1.0.dtd

e. Push Access Protocol

i. http://www.openmobilealliance.org/Tech/DTD/pap_2.1.dtd

ii. http://www.openmobilealliance.org/Tech/DTD/pap_2.2.dtd (*new in Push 2.2*)

6. IMS Communication Resource Identifier (ICSI)

a. urn:urn-xxx:3gpp-service.ims.icsi.omapush (*this URN value is not yet registered with 3GPP, per <http://www.3gpp.org/Uniform-Resource-Name-URN-list>*)

7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

Item:	Entry in this column MUST be a valid ScrItem according to [SCRRULES].
Feature/Application:	Entry in this column SHOULD be a short descriptive label to the Item in question.
Status:	Entry in this column MUST accurately reflect the architectural status of the Item in question. <ul style="list-style-type: none"> • M means the Item is mandatory for the class • O means the Item is optional for the class • NA means the Item is not applicable for the class
Requirement:	Expression in the column MUST be a valid TerminalExpression according to [SCRRULES] and it MUST accurately reflect the architectural requirement of the Item in question.

7.1 Minimum Functionality Description for Push

This section is informative.

The minimum functionality required for push service is divided into client and server requirements.

On the server side it is a minimum that the following is supported:

- Push Access Protocol, mandatory elements
- Push proxy gateway service mandatory service
- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service.

Connection-Orientated push, if supported on the server, must be one or more of the *OTA-WSP* type, the *OTA-HTTP* type, the *OTA-SIP* type, or the *OTA-PTM* type as defined in [PushOTA].

On the client side it is a minimum that the following is supported:

- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service
- Support for ‘Whitelists’ as defined in section 8.3 [PushOTA]

Connection-Orientated push, if supported on the client, must be one or more of the *OTA-WSP* type, the *OTA-HTTP* type, the *OTA-SIP* type, or the *OTA-PTM* type as defined in [PushOTA].

8. ERDEF for Push - Client Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-Push-C-001	Push Client	M	[PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF

Table 1 ERDEF for Push Client-side Requirements

9. ERDEF for Push - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-Push-S-001	Push Server	M	[PAP]:MCF AND [PPGService]:MCF AND [PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF AND

Table 2 ERDEF for Push Server-side Requirements

Appendix A. Change History

(Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version –or- No previous version within OMA

A.2 Draft/Candidate Version 2.3 History

Document Identifier	Date	Sections	Description
Draft Versions: OMA-ERELED-Push-2_3	01 Apr 2009		Initial baseline for RD review
	20 Apr 2009	2.1, 2.2, 4, 6, 7.1	Updates from RDRR OMA-RDRR-Push-V2_3-20090420-D and alignment with updated baseline OMA-ERELED-Push-V2_2-20090420
	21 Apr 2009	4.1	Add historical release description for Push 2.2.
Candidate Version: OMA-ERELED-Push-2_3	26 May 2009	All	Status changed to Candidate by TP: OMA-TP-2009-0203- INP_PTM_Push_V1_0_RD_for_Candidate_Approval Editorial fixes: styles updated.
Draft Version: OMA-ERELED-Push-2_3	23 Sep 2009	5	Document listing updated with latest documents
Candidate Version: OMA-ERELED-Push-2_3	13 OCT 2009	All	Status changed to Candidate by TP: OMA-TP-2009-0448-INP_Push_V2_3_AD_for_Candidate_approval